

**SS20, SS22,
SS2000, SS2002
Series
Discreet
Surveillance
Enclosures**

**Installation/
Operation Manual**

C429M-B (2/98)

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REVISION HISTORY

Manual #	Date	Comments
C429M-A	10/94	Wire colors revised on figures 2-4, 6 and 7. (Pin 8 - Figure 2; Pins 8 & 23 - Figures 3 and 4; Pins 8, 11, 12, 13 - Figures 6 and 7.)
C429M-B	7/96	Revised to include new models SS22 and SS2002-SL.
	8/96	Revised Section 5.0, Mechanical Parts List, regarding lower dome part numbers and quantities of velcro.
	7/97	Corrected wiring for pins 19 and 27 in Figure 7 per ECO 97-235.
	2/98	Revised Section 6.0, Maintenance. Changed manual to new style.

1.0 GENERAL

1.1 IMPORTANT SAFEGUARDS AND WARNINGS



CAUTION: *This device is designed to operate at 24 volts AC power. Input voltages must not exceed 28 volts or drop below 22 volts, or else **damage the the motors will occur.** Should you need technical assistance, please call (800) 289-9100.*

Prior to installation and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by Qualified Service Personnel and conform to all Local codes.
2. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.
3. Only use replacement parts recommended by Pelco.
4. After replacement/repair of this unit's electrical components, conduct a resistance measurement between line and exposed parts to verify the exposed parts have not been connected to line circuitry.
5. The installation method and materials should be capable of supporting four times the weight of the enclosure, pan/tilt, camera and lens combination.

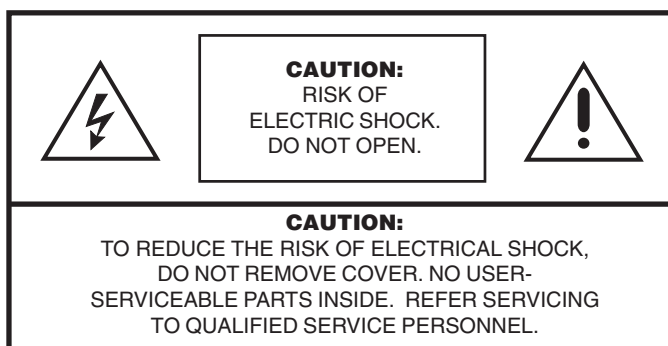
The product and/or manual may bear the following marks:



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

2.0 DESCRIPTION

Pelco's SS20/SS22/SS2000/SS2002 Series domes are full-sphere, discreet surveillance enclosures designed to be suspended from ceilings and to compliment the interior design of businesses, hotels, and offices.

The black opaque (or chrome) lower dome effectively camouflages a CCTV security/surveillance system without compromising the quality of the video picture.

Options for the SS2000/SS2002 include a standard pan/tilt, pan/tilt with continuous 360° pan rotation (SL), or preset pan/tilt available in either the standard or SL version pan/tilt. All pan/tilts are pre-wired for all system functions, dramatically reducing installation time. The use of standard manufactured components increases the reliability and serviceability of the system.

2.1 MODELS

SS20	Full sphere discreet surveillance dome with fixed mount for CCD type cameras. 14" black opaque lower dome with 1 f-stop light loss.
SS22	Same as SS20 except supplied with a 14" chrome opaque lower dome with 2 f-stop light loss.
SS2000	Full sphere discreet surveillance dome with high speed integral pan/tilt for CCD type cameras. 14" black opaque lower dome with 1 f-stop light loss.
SS2000-PP	Full sphere discreet surveillance dome with high speed integral pan/tilt with presets (/PP option) for CCD type cameras. 14" black opaque lower dome with 1 f-stop light loss.
SS2000-SL	Same as SS2000 except supplied with 360° continuous pan rotation
SS2002-SL	Same as SS2000-SL except supplied with a 14" chrome opaque lower dome with 2 f-stop light loss.
SS2000SL-PP	Same as SS2000-PP except supplied with 360° continuous pan rotation.

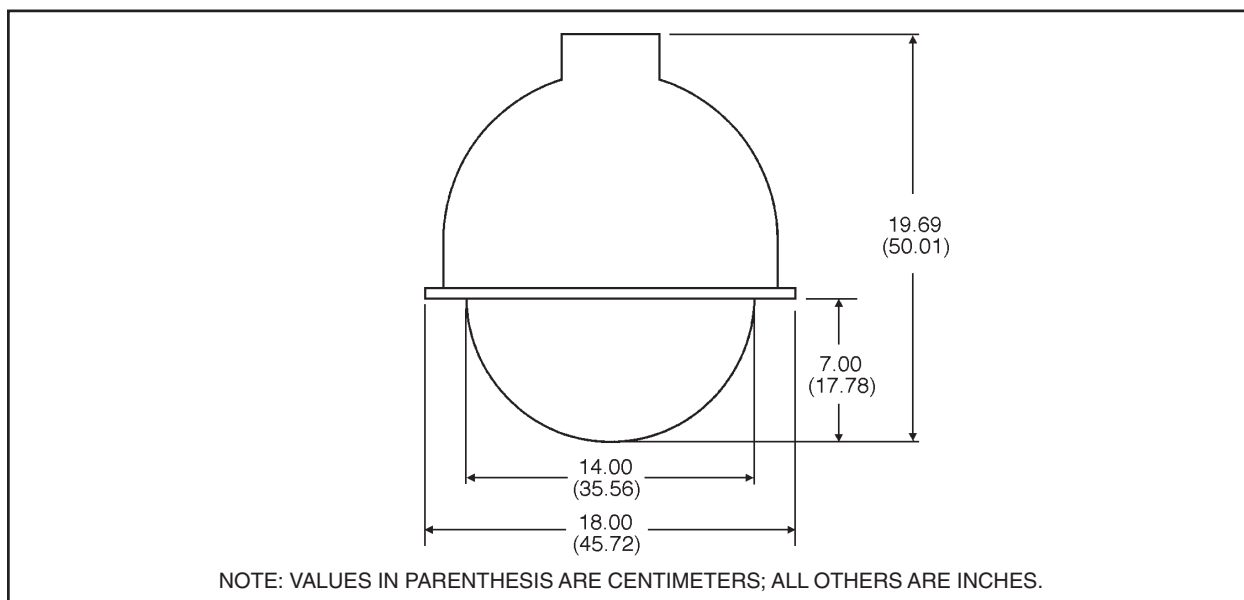


Figure 1. SS20/SS22/SS2000/SS2002 Dimension Drawing

3.0 INSTALLATION

Save the shipping carton and plastic packing in case the unit has to be returned for credit or repair.

3.1 CONDUCTOR AND CABLE REQUIREMENTS

NOTE: *The following are cable requirements. A relay box (RB24) is available to extend the operating distance up to 13,000 feet (3,962 m) over 16 Awg wire.*

A minimum of 11 conductors plus coax is required, which includes common requirements for motorized zoom lens and camera AC power.

Non-PP Models

	<u>11 Conductor</u>	<u>12 Conductor*</u>
18 Awg	227 ft (82m)	494 ft (150 m)
16 Awg	432 ft (131 m)	785 ft (239 m)
14 Awg	690 ft (210 m)	1,253 ft (381 m)

PP Models

	<u>17 Conductor</u>	<u>18 Conductor*</u>
18 Awg	227 ft (82m)	494 ft (150 m)
16 Awg	432 ft (131 m)	785 ft (239 m)
14 Awg	690 ft (210 m)	1,253 ft (381 m)

* Using 2 conductors for common

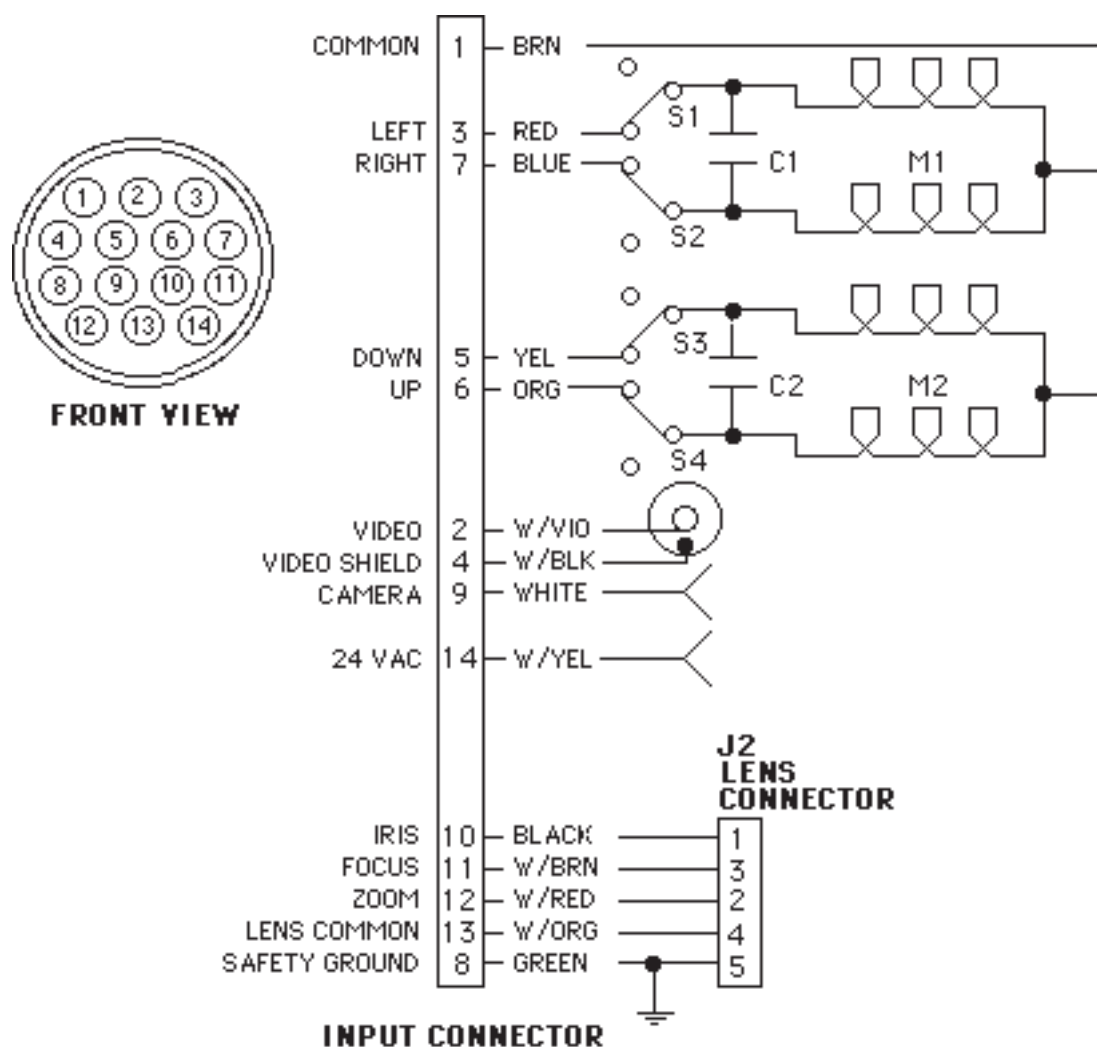
Calculations are based on a 10% cable loss with both motors running.

3.1.1 Recommended Mounts

MRWA	Wall mount adapter
MRCA	Ceiling mount adapter

3.1.2 Recommended Cables

C1906	Pretested 6-foot cable with video coax
C1925	Pretested 25-foot cable with video coax



QTY	SYM	DESCRIPTION	MANUFACTURER	PART NUMBER
1	C1	CAPACITOR 15 MFD 100V	SPRAGUE	CAPU0015.0/100N
1	C2	CAPACITOR 15 MFD 100V	SPRAGUE	CAPU0015.0/100N
1	M1	PAN MOTOR	PELCO	PT350010010
1	M2	TILT MOTOR	PELCO	2508001
1	J2	CONNECTOR	HIRSCHMANN	CONMAB6100
14	--	CONNECTOR PINS	AMP	CON66102-7
4	S1-S4	SWITCH	MICROSWITCH	SW11SM1
1	--	INPUT CONNECTOR	AMP	CON206305-1
1	--	MATING CONNECTOR ASSY	AMP	SS1000ASSY
1	--	ACTUATOR	MICROSWITCH	SW1S138B
1	--	LENS MATING CONNECTOR	HIRSCHMANN	CONMAS6100

Figure 2. SS2000/SS2000-SL/SS2002-SL Wiring Diagram

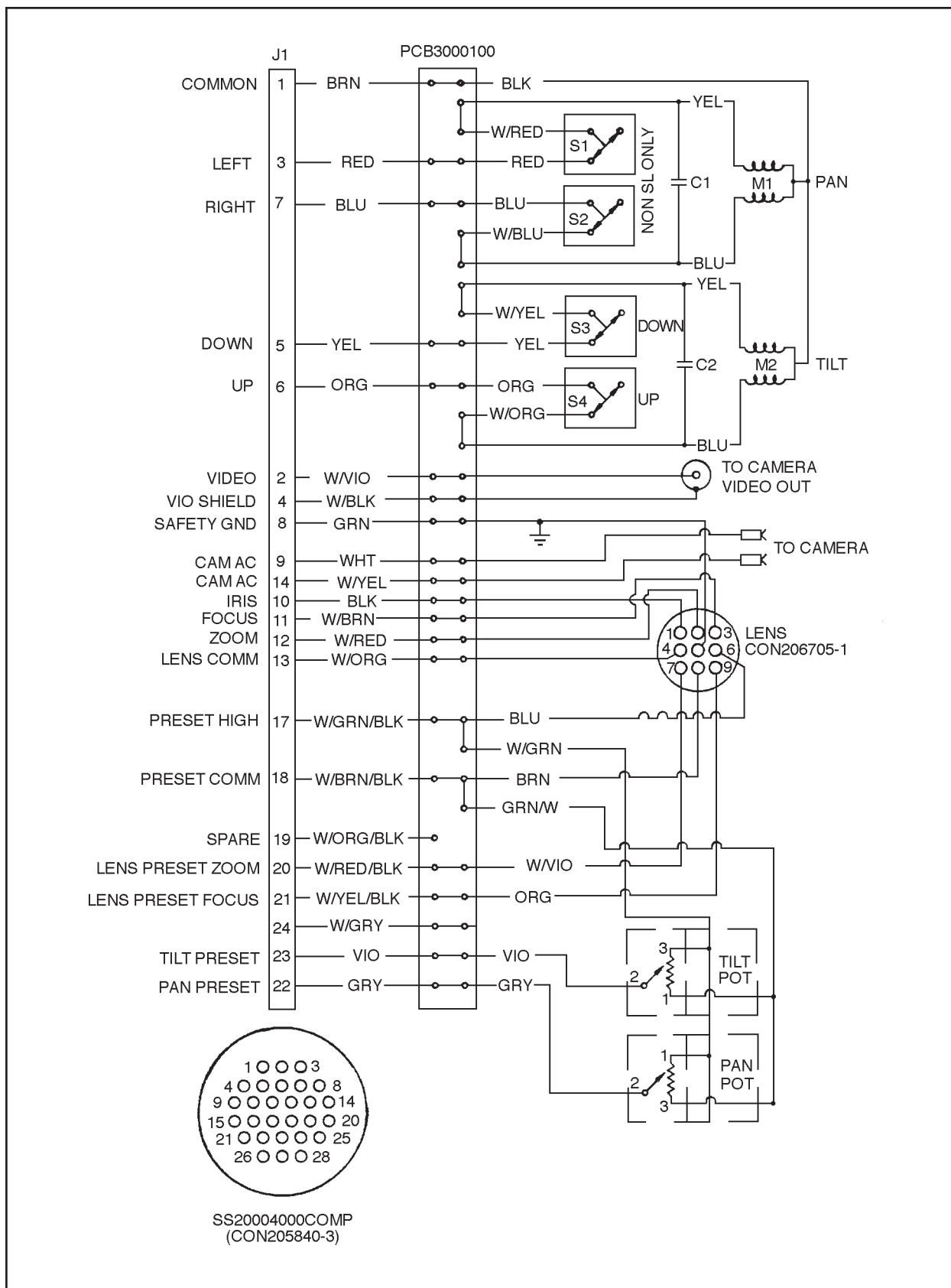


Figure 3. SS2000-PP Wiring Diagram

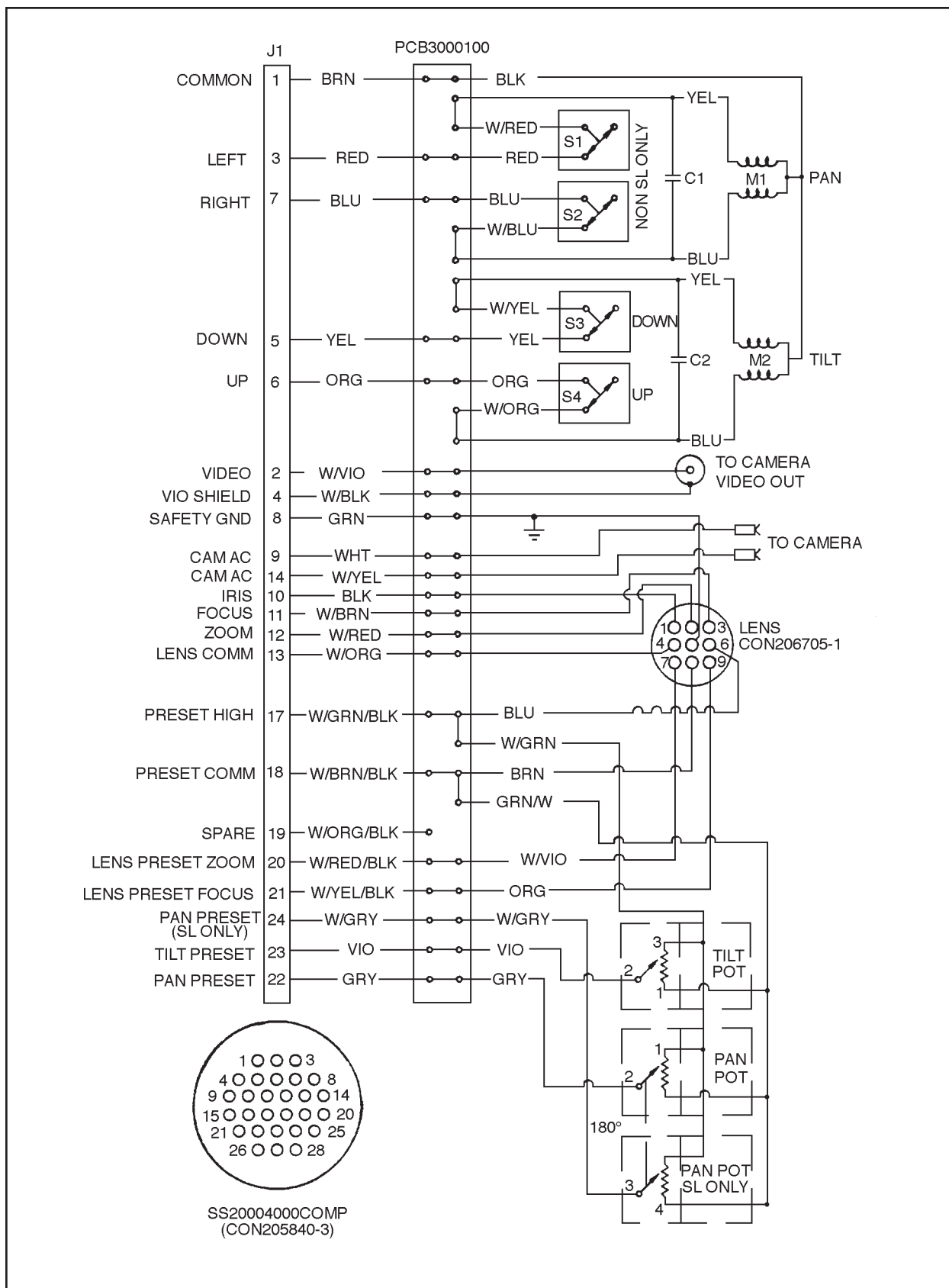


Figure 4. SS2000SL-PP Wiring Diagram

3.2 CONNECTOR ASSEMBLY

NOTE: Contacts cannot be removed from the connector without the use of an AMP extraction tool, part number ZT305183 (for 9-, 14-, or 16-pin connector) or ZT91067-2 (for 28-pin connector), which is available from Pelco.

To install and test the SS2000/SS2002 Series dome you will need to assemble the connector parts provided. Fabricate the interconnecting cable as outlined below (see Figure 5):

1. Slide the cable clamp (part A, item 1) over the cable with the threaded end facing the connector (item 5).
2. If the cable has a diameter less than 1/2 inch (1.3 cm), slide the rubber boot (item 2) over the end of the cable and press inside the cable clamp to form a good seal.
3. Strip back the cable jacket approximately 1-1/4 inches (3.2 cm) and separate the individual conductors.
4. The contact pins supplied with the mating connector are the "crimp" type which may also be soldered if you so desire.
5. After crimping or soldering the contacts, push them into the proper holes in the connector until they snap in place.
6. Slide part A of the cable clamp toward the connector and screw the parts together. Attach part B (item 1) onto part A and connect both parts with the screws provided.
7. Connect the cable assembly to the unit and seat the connector by twisting the locking collar until it snaps into position.
8. For ease of installation, a mating cable assembly is supplied with the domes to extend the cable from the pan/tilt. Please refer to Figures 6 and 7 for wiring (pin locations and color codes).

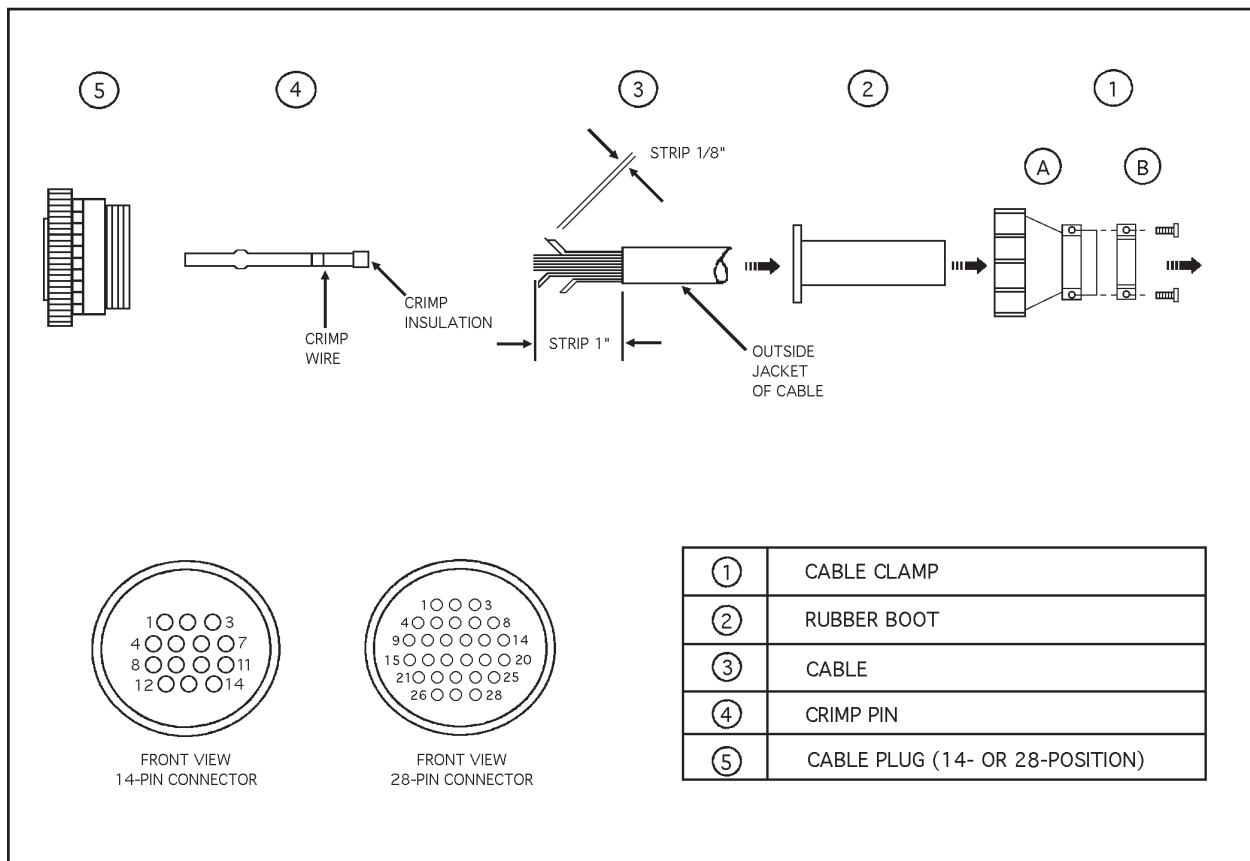


Figure 5. Connector Assembly

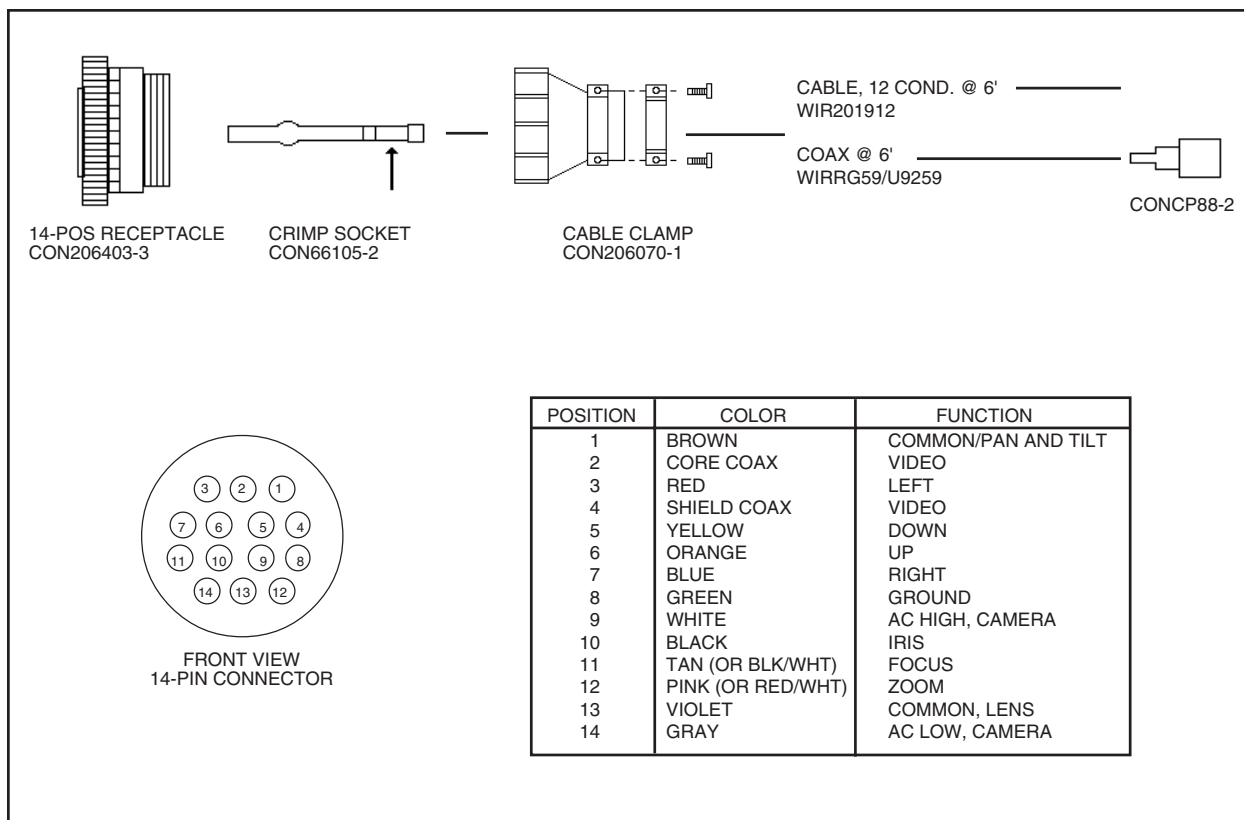


Figure 6. Mating Cable Assembly Configuration (non-PP Versions)

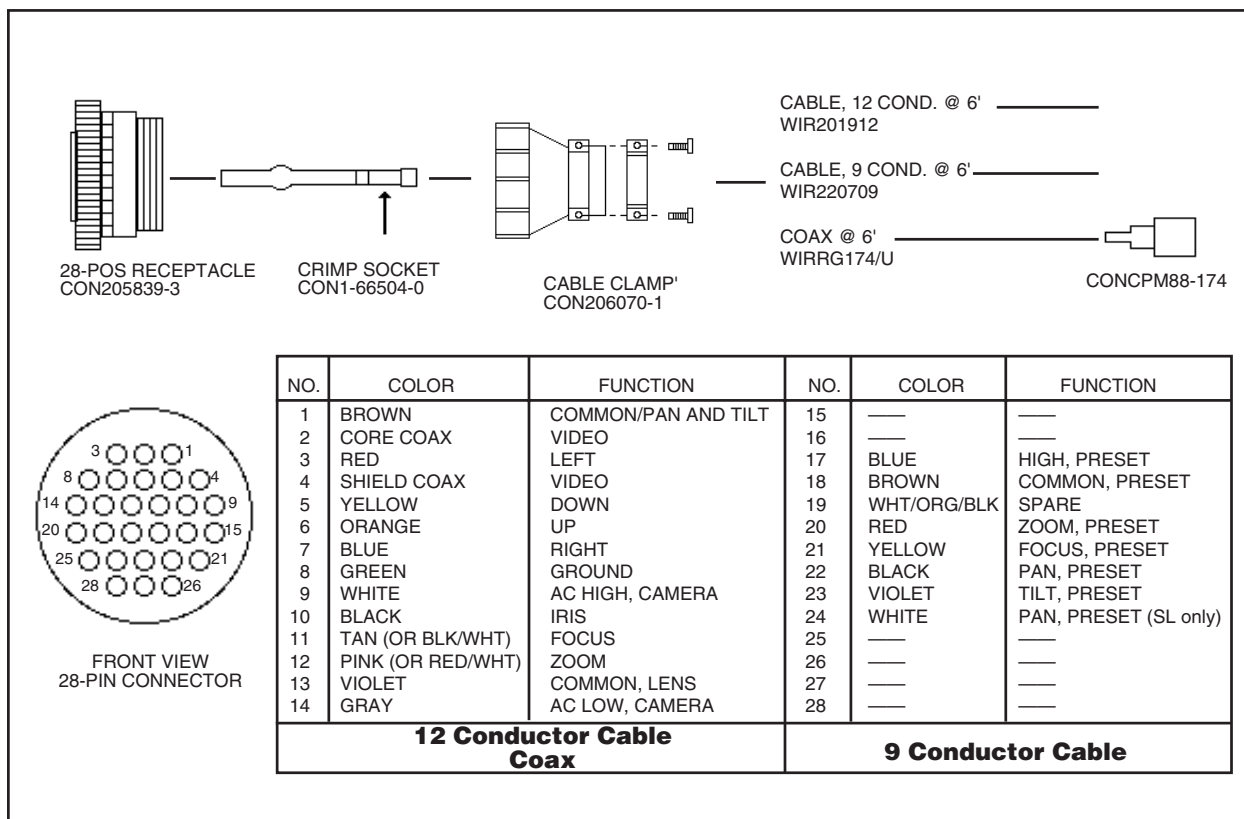


Figure 7. Mating Cable Assembly Configuration (PP Versions)

3.3 MOUNTING

The SS2000/SS2002 enclosure is designed to be suspended from a suitable length of 1-1/2" pipe threaded at both ends. This pipe can be interfaced to either a Pelco MRWA wall adapter, MRCA ceiling adapter, or coupled to a longer length of pipe. Refer to Figure 8 for mounting configurations.

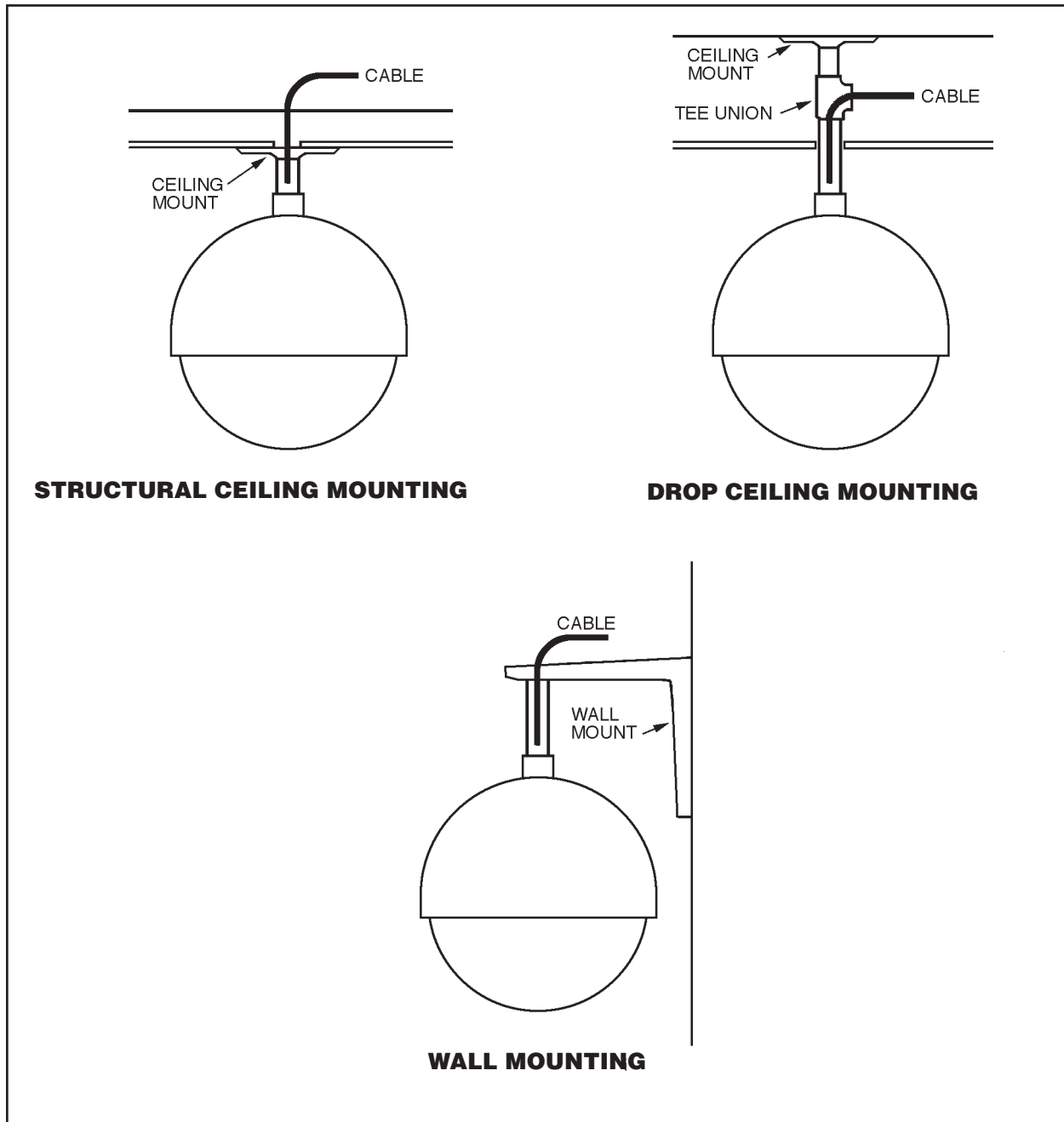


Figure 8. Mounting Configurations

3.4 DOME INSTALLATION

To install your dome system, perform the following steps (refer to Figure 9):

1. Select the appropriate pipe length and mounting method. If the MRCA or MRWA mount is used, tighten the pipe to approximately 30 ft lb, then tighten the 8-32 screw in the pipe nut to lock the pipe threads. Slide the upper dome onto the pipe and lock it out of the way with a suitable retainer.
2. Screw the mounting flange (item 4) onto the pipe and tighten securely (approximately 20 ft lb). Tighten the 8-32 screw in the pipe nut to lock the pipe threads.
3. Align the three-hole pattern in the pan spindle with the holes in the lower bracket (item 5), and attach with 1/4"-20 x 5/8" hex head bolts and lock washers provided. Tighten firmly.
4. Attach the upper (drive) bracket (item 3) to the bottom (spindle side) of the pan/tilt using four (4) 8-32 x 1/2" pan head screws and lock washers provided. Refer to Figure 9 for proper orientation.
5. Connect the installation cable to the pan/tilt and feed it through the center of the 1-1/2" pipe. Pull the cable and connector back up into the pipe so that it does not get caught on the rotating parts.
6. Assemble the lower bracket and pan/tilt to the mounting flange (item 4) using 1/4" x 5/8" hex head bolts and flat washers.
7. Install the camera/lens assembly onto the tilt table of the pan/tilt. Connect the proper cables.
8. Remove the retainer from the upper dome and lower it until it seats itself on the drive bracket.
9. Turn the system "ON" and rotate the pan/tilt. Check for cable interference. Tilt the camera up and down and check for clearance of all moving parts.
10. After all tests have been done and the system is functioning properly, attach the safety chain to the upper dome with the fasteners provided. Install the lower dome and align the viewing window.
11. Check for sufficient clearance between the lens and the lower dome.

NOTE: *The small hole in the upper dome (for safety chain attachment) should be positioned at the back (connector) end of the camera.*

NOTE: *For SS20/SS22 mounting, refer to steps 1, 2, 6, 7, 8, and 10. For step 9, adjust the tilt and rotation, and tighten all hardware.*

4.0 EXPLODED ASSEMBLY DIAGRAM

Table A. SS2000/SS2002 Exploded Assembly Diagram

Item	Qty	Description	Part Number
1	1	Dome, upper	SS200010000
2	1	Dome, lower, Black (Opaque)	SS200010001*
		Dome, lower, Chrome (Opaque)	SS2012000*
3	1	Bracket, drive	SS20004007COMP
4	1	Bracket, upper	SS20001000COMP
5	1	Bracket, lower	SS20004008COMP
6	48	Velcro, black, 5/8" wide x inch (not shown)	TV10002
7	50	Velcro, black, 5/8" wide x inch (not shown) (SS22 & SS2002-SL)	TV10003
	56	Velcro, black, 5/8" wide x inch (not shown) (SS20 & SS2000 Series)	TV10003
8	1	Chain, safety	SB2511000
9	1	Pan/tilt assembly	PT2500
	1	Fixed mount assembly (Model SS20 only)	SS20001001ASSY
10	1	Cable assembly, 14-pin x 6' (For SS2000 and SS2000-SL)	SS1000ASSY
		Cable assembly, 28-pin x 6' (SS2000-PP and SS2000SL-PP)	SS1001ASSY
11	1	Pipe, mounting	SS34002COMP
12	1	Snap body for safety chain (not shown)	SB2511001

* Part number is for the dome only. To order a complete lower dome assembly, specify the part numbers SS20004300COMP (black) and SS20200COMP (chrome). These part numbers include items 2, 7, 8, and 12.

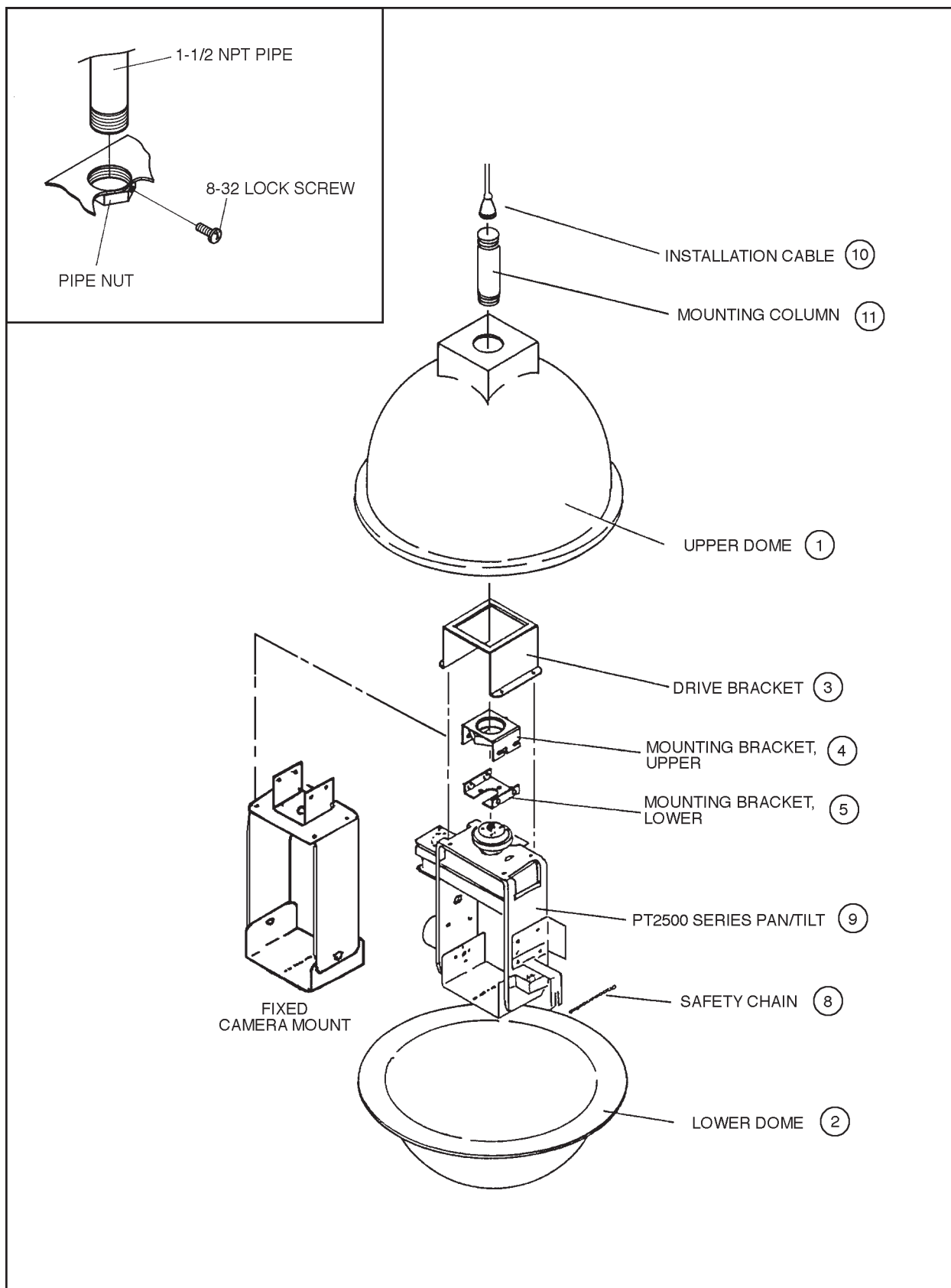


Figure 9. SS2000/SS2002 Exploded Assembly Diagram

5.0 ADJUSTMENTS



CAUTION: *Do not attempt to adjust limit stops when the pan/tilt is in operation. Damage to the equipment can result. Do not operate equipment without limit stops. SL models are supplied without pan limit stops, therefore, no adjustments are necessary.*

To adjust the pan/tilt limits, perform the following steps. Refer to Figure 10 for limit stop locations.

Factory pan limits are set to 0-355° and tilt limits are set to 0-90° (horizontal to vertical). Under normal conditions, the tilt limits should not have to be reset. To adjust limit stops, perform the following steps:

1. Pan to the right using the joystick control until the desired pan limit is reached. Adjust the pan limit stop until the actuator clicks. Lock the limit into position.
2. Pan to the desired left position, adjust the pan limit stop until the actuator clicks, and lock into position.
3. Pan to the left and right to verify exact positioning and tighten both stops securely.
4. The tilt limit is designed to allow for 0-90° travel (horizontal to vertical). The tilt can be adjusted to any point between horizontal and vertical, but must never exceed these boundaries.
5. To alter the factory-set tilt limit, bend the actuator stops on the micro switches. Move the tilt table to the desired position and adjust the actuators until the switch clicks, lock into position (see Figure 11).
6. Tilt up and down to verify exact positioning.

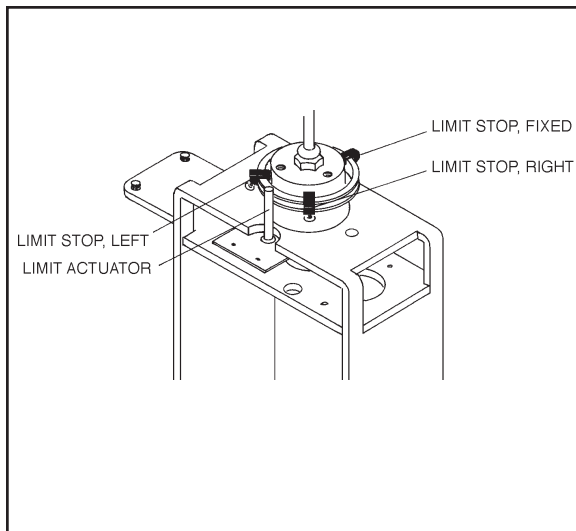


Figure 10. Limit Stop Locations

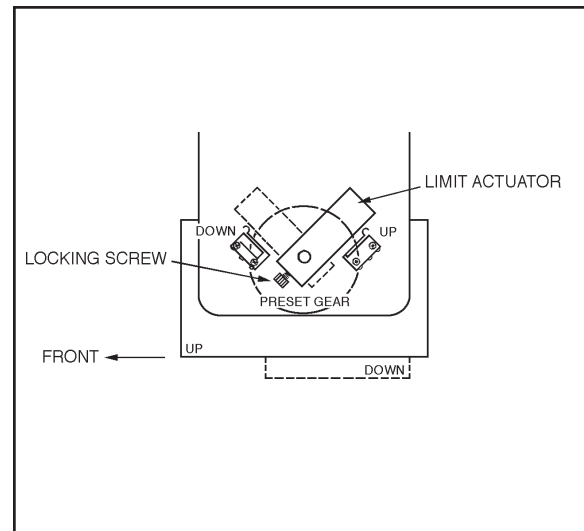


Figure 11. Tilt Limit Stop Modifications

6.0 MAINTENANCE

Clean the acrylic lower dome as necessary to maintain a clear picture. Be careful not to scratch the surfaces of the dome.

Exterior Surface - Clean the dome's exterior surface with a nonabrasive cleaning cloth and cleaning agent that is safe for acrylic plastic. Either liquid or spray cleaner/wax suitable for fine furniture is acceptable.

Interior Surface (Except Chrome) - Clean the same as the exterior surface.

Interior Surface (Chrome) - The inside surface of a chrome dome is easily scratched. Use the following precautions to maintain the dome's surface.

- a. Always handle the dome from the outside of its circular flange.
- b. Never touch the coated inside surface. The acid in your fingerprints will eventually etch the coating if the fingerprints are not carefully removed according to the recommended cleaning procedure in item "e."
- c. If dust or other contaminants accumulate on the dome's interior, remove the debris with compressed air. Compressed air cans are available from photographic equipment or electronic supply dealers.
- d. If heavy residue accumulates and cannot be removed with air pressure, rinse with water and immediately dry with air pressure so that water spots will not remain. Avoid wiping the coated surface with direct hand pressure - it will easily abrade unless extreme care is taken. Once scratched, the dome cannot be recoated.
- e. If internal wiping is necessary, avoid hand rubbing. Instead, make a wick as follows:

Use a very soft paper towel. Roll a section into a tightly wound tube. Tear the tube in half, and wet the fuzzy end of the wick with a solution of isopropyl alcohol diluted with water. Hold the dome with its opening facing downward and wipe the interior of the dome with the wet end of the wick. Use a circular motion, starting from the outside and spiraling into the center. Use a new wick for each two passes over the dome.

7.0 SPECIFICATIONS

ELECTRICAL

Input Voltage:	24 VAC required for pan/tilt
Running Current	
Pan:	0.31 amp (7.44 vA)
Tilt:	0.38 amp (9.12 vA)
Connectors	
Pan/Tilt:	Amp CPC type (mate supplied)
Lens:	Hirschmann MAB6100
Video:	BNC
Camera Power:	Spade lugs
Motors:	Two-phase induction type, instantaneous reversing
Limit Switches	
Pan:	5 amp, (external adjustment)
Tilt:	5 amp, (external adjustment)
Conductor Requirements as listed, plus coax cable:	
Non-PP models:	Pan/tilt (5 plus ground), Lens (4), Camera AC (2)
PP models:	Pan/tilt (9 plus ground), Lens (6), Camera AC (2)

MECHANICAL

Pan:	0-355° movement in horizontal plane (Models SS2000, SS2000-PP) 360° continuous rotation (Models SS2000-SL, SS2000SL-PP)
Pan Speed:	24°/sec \pm 1° (no load condition)
Tilt:	-90° from horizontal plane
Tilt Speed:	12°/sec \pm .5° (no load condition)
Maximum Load:	10 lb (4.6 kg)
Gearing:	Chain and direct drive
Bearings	
Pan:	Heavy duty ball bearing and Oilite bronze bushing
Tilt:	Oilite bronze bushing
Braking:	Friction

GENERAL

Maximum Camera/
Lens Length: 12.5 inches (31.75 cm)

Ambient
Temperature
Range: 35°F to 120°F (1.6°C to 48.8°C)

Construction
Upper dome: Black, high-impact plastic, ABS
Lower dome: Acrylic hemisphere with distortion-free viewing window with light attenuation factor of 1 f-stop; model SS2002-SL has 2 f-stop light attenuation factor. Rotates with pan/tilt and camera/lens

Dimensions: See Figure 1

Weight
Model SS20/
SS22: 7 lb
All other models: 14 lb 13 oz

Shipping Weight
Model SS20/
SS22: 8 lb
All other models: 17 lb

(Design and product specifications subject to change without notice.)



This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

NOTES

8.0 WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship for a period of one year after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

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